

2010

Korea's Patent Policy and Its Impact on Economic Development: A Model for Emerging Countries?

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Publication Information

11 San Diego International Law Journal 441 (Spring 2010)

Repository Citation

Erstling, Jay, "Korea's Patent Policy and Its Impact on Economic Development: A Model for Emerging Countries?" (2010). *Faculty Scholarship*. Paper 138.

<http://open.mitchellhamline.edu/facsch/138>

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Korea's Patent Policy and Its Impact on Economic Development: A Model for Emerging Countries?

Abstract

The purpose of this paper will be to examine Korean patent policy as exemplified by its patent legislation and the activities of Korean Intellectual Property Office (KIPO). Part II will take a brief look at the rationale underpinning Korea's confidence in the power of the patent system to stimulate economic growth. Part III of the paper will look at the Korean Patent Act as an example of strong, comprehensive patent legislation that fully complies with international standards and responds well to the perceived needs of patent applicants. In order to provide a basis of comparison, reference will be made wherever applicable to similar or divergent provisions in the United States Patent Act. Part III will examine one of the highlights of Korean patent legislation, the Korean Invention Promotion Act, which focuses national attention on the promotion of patentable technology and provides a system of compensation for employee inventors. Part IV of the paper will turn to the activities of KIPO and its sister agencies. Part V will examine the impact that Korean patent policy has had on Korean economic growth as well as on Korea's place in the world patent community. It will posit that the Korean recipe for success--the main ingredients of which are a strong law, an active patent office with a broad mandate, and a commitment to using the patent system to build capacity--is a transferable one, and it will therefore suggest that Korean policy may be well suited to serve as a model for other emerging countries wishing to use patents to promote economic development.

Keywords

Intellectual property, comparative law, patents, international trade

Disciplines

Comparative and Foreign Law | Intellectual Property Law | International Law

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Citation: 11 San Diego Int'l L.J. 441 2009-2010

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Korea's Patent Policy and Its Impact on Economic Development: A Model for Emerging Countries?

JAY A. ERSTLING*
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I. INTRODUCTION

In the early 1960s the Republic of Korea (Korea) was the poorest country in East Asia with a per capita income less than half that of Ghana or Honduras,¹ and a per capita GDP of approximately \$160.² Today, Korea has achieved the status of a newly advanced economy. It ranks thirteenth in the amount of trade generated, fourth in the number of patent applications filed in 2008,³ and by 2007 its per capita GDP had risen to \$20,000.⁴ It is generally accepted that the Korean government's policy of state activism and strategic private sector capacity building, which it first adopted in the mid-1960s and has maintained in one form or another ever since, has played a key role in Korea's successful

1. HA-JOON CHANG, *THE EAST ASIAN DEVELOPMENT EXPERIENCE: THE MIRACLE, THE CRISIS AND THE FUTURE* 1 (2006).

2. Keun Lee, *How Can Korea Be a Role Model for Catch-Up Development?: A 'Capability-Based View'* 1 (U.N. U. World Inst. Dev. Econ. Res., Research Paper No. 2009/34, 2009).

3. Chang Ryong Kim, *IP as Development Tool*, 2 KOREA IP NEWS Q., May 2009, at 1, available at <http://www.kipo.go.kr/en/> (under "Reference Material" tab, select "Webzine" and download "Spring 2009" issue).

4. Lee, *supra* note 2, at 1.

economic growth.⁵ Although the subject of little discussion, Korean patent policy and the activities of the Korean Intellectual Property Office (KIPO) have been integral components in Korea's successful growth strategy and continue to be important factors in ensuring Korea's economic wellbeing.⁶

Korea has long been a proponent of strong patent protection and of the need to maintain a robust, well-functioning patent office that supports the development of local technology.⁷ That view is consistent with the notion, to which Korea subscribes, that the patent system can help promote and sustain healthy economic development, particularly in emerging—or newly industrializing—countries.⁸

The purpose of this paper will be to examine Korean patent policy as exemplified by its patent legislation and the activities of KIPO. Part II will take a brief look at the rationale underpinning Korea's confidence in the power of the patent system to stimulate economic growth. While there is increasing acceptance of the view that patents can serve as an effective development tool, or at the very least that patents are an inevitable part of economic life,⁹ there is lack of unanimity as to the

5. Keun Lee & Yee Kyoung Kim, Intellectual Property Rights and Technological Catch-up in Korea, Presentation at the Tokyo Meeting on IPRs and Technological Catch-Up (Jan. 12–13, 2008) (slides on file with authors).

6. A study by the Korean Development Institute (KDI) found, for example, that “an increase of 1% in national patent applications correlates with an increase of 0.11% in national growth within three to five years, and an increase of 100% in an enterprise's patent registrations correlates with an increase of 2.9% in that enterprise's value.” Jong-Hyub Choi, *Theme II: Creation, Management and Use of IP—An Integrated and Proactive IP Policy and Strategy 2*, at WIPO Asia Pacific Regional Seminar on Intellectual Property (IP) Strategy for Economic Development, WIPO Doc. WIPO/IP/KUL/03/3 (Nov. 2003).

7. Interview with Kuiwou Kwon, Intellectual Property Attaché, Embassy of the Republic of Korea, in Washington, D.C. (Aug. 25, 2009).

8. For the purposes of this paper, we define emerging countries as newly industrializing ones that are experiencing substantial economic and technological transformation and growth. In general, “[t]hey seek broad worldwide protection [of intellectual property] in addition to increased domestic protection as an incentive for local industry to develop intellectual property and to compete better at home and abroad.” Jean Raymond Homere, *Intellectual Property Rights Can Help Stimulate the Economic Development of Least Developed Countries*, 27 COLUM. J.L. & ARTS 277, 277 (citing Michael W. Smith & Hugh C. Hansen).

9. See *id.*; see also Keith E. Maskus, *The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer*, 9 DUKE J. COMP. & INT'L L. 109, 110, 134–35 (1998); Ronald Zink, *The Role of IP in Promoting Economic Growth Through Innovation*, INTELL. ASSET MGMT., May/June 2009, at 23; Sean A. Pager, *Patents on a Shoestring: Making Patent Protection Work for Developing Countries*, 23

level of protection needed to promote adequate technological development and achieve success. Looking at Korea's development experience might therefore contribute to ongoing policy discussions about the proper place of patents in the development schemes of emerging countries.

Part III of the paper will look at the Korean Patent Act as an example of strong, comprehensive patent legislation that fully complies with international standards and responds well to the perceived needs of patent applicants. In order to provide a basis of comparison, reference will be made wherever applicable to similar or divergent provisions in the United States Patent Act.¹⁰ Part III will examine one of the highlights of Korean patent legislation, the Korean Invention Promotion Act, which focuses national attention on the promotion of patentable technology and provides a system of compensation for employee inventors.

Part IV of the paper will turn to the activities of KIPO and its sister agencies. By adopting a deliberate policy of direct interaction with Korean industry—in particular with small and medium-sized enterprises—KIPO has proven to be especially effective in facilitating use of the patent system to promote technological innovation. As will be seen, the breadth and intensity of the activities that Korea has implemented are exceptional, but the initiatives themselves are duplicable, even if on a smaller scale than the manner in which they are being carried out in Korea.

And finally Part V will examine the impact that Korean patent policy has had on Korean economic growth as well as on Korea's place in the world patent community. It will posit that the Korean recipe for success—the main ingredients of which are a strong law, an active patent office with a broad mandate, and a commitment to using the patent system to build capacity—is a transferable one, and it will therefore suggest that Korean policy may be well suited to serve as a model for other emerging countries wishing to use patents to promote economic development.

II. PATENTS AND ECONOMIC DEVELOPMENT

With the growth of international trade and the establishment of the World Trade Organization's Agreement on Trade-Related Aspects of

GA. ST. U. L. REV. 755, 758 (2007) (“[T]he question is therefore no longer whether to have a patent system, but what kind of patent system.”).

10. Patent Act, 35 U.S.C. §§ 1–376 (2009).

Intellectual Property Rights (TRIPS Agreement),¹¹ nations have been obliged to focus increasing attention on the role of patents in economic development.¹² Despite a growing consensus that patent rights can help stimulate and sustain economic growth—especially in industrialized and emerging countries¹³—there is still much discussion about how to maximize the effectiveness of patents as an economic driver.

Proponents of strong protection contend that patents foster “the transfer of technology by facilitating licensing, disclosing innovations and creating incentives to publish research results. Access of local firms to new technology is thereby increased which, in turn, fosters [domestic innovation and] economic growth.”¹⁴ Patent rights can therefore help a nation's local industry expand its ability to develop new products and technologies. As the local industry's ability to innovate grows, the

11. Agreement on Trade-Related Aspects of Intellectual Property Rights, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, Apr. 15, 1994, 33 I.L.M. 81 (1994) [hereinafter TRIPS], available at http://www.wto.org/english/docs_e/legal_e/27-trips.pdf.

12. See Maskus, *supra* note 9, at 109.

13. It is important to note that this sanguine view of the impact of patent rights on development is not shared by all. See, e.g., A. Samuel Oddi, *The International Patent System and Third World Development: Reality or Myth?*, 5 DUKE L.J. 831 (1987); Pager, *supra* note 9, at 757 (“The debate over whether or not patent protection makes sense in developing countries began long before TRIPS and continues today.”); Amir H. Khoury, *Dubai's New Intellectual Property-Based Economy: Prospects for Development without Dependency*, 9 J. MARSHALL REV. INTELL. PROP. L. 84, 90–91 (2009) (“The debate over the benefits of intellectual property law on the economy of countries is framed by two opposing views. On the one hand, proponents of intellectual property legislation contend that intellectual property protection is beneficial to all economies Other[s] challenge this rosy picture.”).

14. RICHARD T. RAPP & RICHARD P. ROZEK, BENEFITS AND COSTS OF INTELLECTUAL PROPERTY PROTECTION IN DEVELOPING COUNTRIES, (Nat'l Econ. Res. Ass'n, Inc., Working Paper No. 3, 1990) (copy on file with authors); See also Pager, *supra* note 9, at 763–64.

Technological benefits that developing countries may contemplate in structuring their patent system include: (1) providing incentives and support for indigenous innovation; (2) encouraging local entrepreneurship; (3) disseminating knowledge of foreign technologies to the public; (4) encouraging the transfer of proprietary technology by foreign companies; and (5) creating incentives to develop or adapt technologies to meet specific national needs. Ancillary benefits may include: (6) generating revenues from patent fees; (7) developing a reservoir of technical and scientific expertise; and (8) providing jobs to local graduates. Patent systems should also be designed with a view to minimizing costs, such as: (9) conserving institutional resources devoted to administration; (10) preventing anticompetitive abuse of patent rights; and (11) limiting the flow of rents to foreign patent-holders; and (12) preserving the public domain.

Id.

nation's economic incentive to further strengthen and enhance its patent system likewise increases.¹⁵ Strong patents, according to this line of reasoning, both encourage the transfer of the most advanced technologies and induce the most productive local R&D;¹⁶ consequently, strong patents particularly benefit nations that have begun to achieve a minimum level of technological growth.

Professor Keith Maskus, in a classic 1998 article, described the relationship between patents and economic development as follows:

One interesting implication of the fact that stronger [patents] increases the likelihood that advanced technologies will be transferred is that rapidly growing, developing countries should develop a natural interest in improving their [patents] regime as they increase their ability to absorb and even develop more sophisticated innovations. That is, perhaps, the best argument in favor of adopting strong [patent] protection for nations such as Korea, Brazil, Mexico, and Malaysia. In the early stages of their industrial growth, developing countries have an interest in limited protection, because they want to be able to freely imitate imported technologies. As they develop, however, they should become increasingly interested in tightening [patents], both in order to attract the most advanced technologies and to encourage their own innovation. This prediction is confirmed by the varying degrees of patent protection across countries according to the level of economic development [footnotes omitted].¹⁷

Assuming that emerging countries opt for a strong patent route, it is essential that they ask what sort of protection they wish to adopt. The creation in 1994 of the TRIPS Agreement—which is binding on all members of the World Trade Organization—has circumscribed to a considerable extent the legislative choices that nations now have. The TRIPS Agreement mandates a “fairly broad baseline level of patent protection,” and requires minimum standards of protection to which all member countries must adhere.¹⁸ For example, the Agreement provides that patents must be granted for a minimum term of twenty years,¹⁹ that they must be available in almost all fields of technology for both products and processes,²⁰ that the owner of a patent must enjoy certain minimum rights,²¹ and that governments must ensure that patent enforcement is adequate and fair.²²

Nevertheless, the TRIPS Agreement leaves countries with a substantial degree of flexibility in setting the level of patent protection

15. See Maskus, *supra* note 9, at 125.

16. *Id.* at 125–26.

17. *Id.* at 133–34.

18. Pager, *supra* note 9, at 758.

19. TRIPS, *supra* note 11, pt. II, § 5, art. 33.

20. *Id.* art. 27.

21. *Id.* art. 28.

22. *Id.* pt. III, § 1, art. 41.

they wish to provide, and it relies on member countries to choose among the various policy options that maintaining a functioning patent system requires. In crafting patent legislation, countries have considerable leeway within the confines of TRIPS to decide, for example, how broadly they wish to set the criteria for patentability, how expansively they wish to define the exclusive rights granted by a patent, how extensively they wish to delineate the scope of patentable subject matter, or how narrowly they wish to limit the defenses to patentability. Similarly, countries have wide choices in their responses to the procedural questions demanded by a patent system, and those choices can make the system either user-friendly or not. For instance, countries need to determine how high fees should be set, whether discounts should be available to small- and medium-sized enterprises, whether deferred examination should be available, and whether opposition proceedings should be provided, and if so, how difficult they should be to use. As Section II will discuss, Korea has in almost all cases opted for strong, comprehensive responses with the objective of incentivizing and encouraging innovation

An effective patent law may be a necessary feature of a patent system that promotes economic growth, but it is not sufficient. A country must also have a well-functioning patent office and an efficient innovation infrastructure. According to Professor Maskus, "This involves supporting basic research capabilities, removing disincentives for applied R&D and its commercialization, instituting incentive structures that help stimulate local innovation and taking greater advantage of access to scientific and technical information that exists within the global information infrastructure."²³ A patent office can be a crucial factor in helping to achieve those objectives by "embracing high-speed information technology . . . providing quick and competent responses to patent requests, and by . . . adopting new technologies to analyze and support patent acquisition."²⁴ As will be seen in Part III, below, KIPO provides all that and more.

23. Maskus, *supra* note 9, at 151.

24. Robert M. Sherwood, Vanda Scartezini & Peter Dirk Siemsen, *Promotion of Inventiveness in Developing Countries Through a More Advanced Patent Administration*, 39 IDEA 473 (1998).

III. KOREAN PATENT LEGISLATION AND ECONOMIC DEVELOPMENT

A. *The Korean Patent Act*

The Korean Patent Act²⁵ begins by clearly identifying the goals of the Korean patent system—to facilitate technological development and contribute to industrial development by protecting and encouraging invention and promoting its use, and to further the development of the industry through the invention application.”²⁶ The dual nature of the Korean patent system is thereby transparent and readily identifiable. It seeks both to protect and encourage inventions while at the same time promoting industrial development. In this sense, Korea’s patent system reflects its reality as a newly industrializing nation. For Korea, its patent system provides more than regulatory infrastructure for protecting intellectual property—it also functions to promote the commercialization of the technology that is the subject of patent protection.

The Korean Patent Act has been amended sixteen times since January 1997, “so often and so many times,” according to one Korean commentator, that “it has been somewhat difficult for us, Korean patent attorneys, to follow up the changes of the law.”²⁷ The purpose of the amendments and revisions has been “to keep up with and to reflect the trends and the changes [in the intellectual property] field in international society.”²⁸ The following overview of the Act will focus on the most recent version. It will also explain how and why certain provisions promote strong economic development.

25. Law No. 950 of December 31, 1961; as amended by Law No. 1293 of March 5, 1963; as revised by Law No. 2505 of February 8, 1973, amended by Law No. 2658 of December 31, 1973; Law No. 2957 of December 31, 1979; Law No. 3325 of December 31, 1980; Law No. 3566 of November 29, 1982; Law No. 3891 of December 31, 1986; revised by Law No. 4207 of January 13, 1990; amended by Law No. 4541 of March 6, 1993; Law No. 4594 of December 10, 1993; Law No. 4757 of March 24, 1994; Law No. 4892 of January 5, 1995; Law No. 5080 of December 29, 1995; Law No. 5329 of April 10, 1997; Law No. 5576 of September 23, 1998; Law No. 6024 of September 7, 1999; Law No. 6411 of February 3, 2001; Law No. 6582 of December 31, 2001; Law No. 6626 of January 26, 2002; Law No. 6768 of December 11, 2002; Law No. 7289 of December 31, 2004; Law No. 7427 of March 31, 2005; Law No. 7554 of May 31, 2005; Law No. 7869 of March 3, 2006; Law No. 7871 of March 3, 2006; Law No. 8171 of January 3, 2007; Law No. 8197 of January 3, 2007; Law No. 8357 of April 11, 2007; Law No. 9381 of January 30, 2009 (S. Korea), *available at* <http://www.kipo.go.kr/kpo/eng/>.

26. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, UNDERSTANDING THE PATENT ACT OF THE REPUBLIC OF KOREA 3 (2007).

27. Jong Yoon Kim, *South Korea (Republic of Korea)*, in PATENTS THROUGHOUT THE WORLD ch. 93:1 (4th ed. 2009).

28. *Id.*

1. Patentability Under the Act

The dual-purpose aspect of the Korean Patent Act is reflected in the four basic requirements for patentability: (i) invention; (ii) industrial applicability; (iii) novelty; and (iv) inventive step.²⁹ In addition to establishing positive criteria for patentability, the Korean Patent Act expressly excludes certain categories from eligibility for patent protection. Those categories include inventions that are anticipated to cause public disorder, are the subject of bad moral judgment, or harm public health.³⁰ In this broad respect, the Korean Patent Act is configured to protect, and thereby promote, technology that furthers rather than hinders economic development.

a. The Requirement of an "Invention"

Inventions that meet the four established criteria for patentability but nonetheless fall into one of those exceptions cannot be patented. "Invention" is defined under the Korean Patent Act as "a highly skilled thing or art that is a technological creation of ideas using natural laws."³¹ A law of nature refers to "a certain unchangeable and unavoidable law taking place in the natural world that is the reason for the occurrence of a phenomenon in the natural world," such as the laws of thermodynamics.³² This does not necessarily mean that the inventor must actually be aware of the applicable law of nature in creating the invention. Rather, it simply requires the capability that the invention is repeatable by a third party under the same conditions.³³ In this respect, the first criterion of "invention" functions similarly to the "enablement requirement" under U.S. patent law, which requires the disclosure of a filed application to contain sufficient written description to enable one of ordinary skill in the art to practice the invention.³⁴

29. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 3–4.

30. *Id.* at 4.

31. *Id.* at 3.

32. *Id.* at 41.

33. *Id.* at 42.

34. *See* 35 U.S.C. § 112, ¶ 1 (2009).

b. The “Industrial Applicability” Requirement

The second prong, “industrial applicability,” refers to the requirement that the technology that is the subject of a patent contribute to the development of a national industry. An important aspect of this requirement is that it functions to exclude inventions that can only be used academically or experimentally.³⁵ Specific industries that fulfill the “industrial applicability” requirement include goods-producing fields such as manufacturing, farming, forestry, and stock farming as well as service-related fields such as transportation, commerce, finance, and medicine.³⁶ Within the medical field, however, a special set of rules applies. Although drugs and equipment for treating and diagnosing human conditions such as diseases are patentable, methods directed to treating and diagnosing human conditions are not.³⁷

The industrial applicability provision of the Korean Patent Act, perhaps more than any other, symbolizes the Act’s goal of promoting economic development. In particular, it differentiates between “mere invention” and “invention with a purpose,” only the latter being entitled to patent protection in the Korean system. Because Korean law requires a minimum threshold of commercial applicability to be achieved by an invention, the Korean standard of industrial applicability is stronger than the U.S. standard of “usefulness” under § 101 of the U.S. Patent Act, 35 U.S.C. § 101. It is not too much of an exaggeration, therefore, to conclude that an invention’s eligibility for patent protection in Korea is dependent on its capacity to promote economic productivity.

c. The “Novelty” Requirement

“Novelty requires that an invention be quantitatively different from a previously registered invention.”³⁸ Interestingly, the Korean Patent Act does not expressly define “novelty.”³⁹ It does, however, provide that an invention has novelty unless it is publicly known, used, or described in a “distributed publication” or published through “telecommunication means.”⁴⁰ Unlike the novelty provisions of the U.S. patent system,⁴¹ the

35. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 46.

36. *Id.* at 4.

37. *Id.* at 46.

38. *Id.* at 4.

39. *See id.* at 48.

40. *Id.*

41. *See, e.g.*, 35 U.S.C. § 102(b) (2009) (providing that an invention is not patentable if the invention was patented or described in a printed publication in this or a foreign country or

Korean patent system does not have a “grace period” during which inventions may be patentable over prior publications by third parties. This means that in Korea, an invention filed the same day but after a third party made the invention public would lack novelty. This is important because it encourages use of the Korean patent system. Unlike the U.S. system, Korean patent law is relatively new. The lack of a grace period, as well as other provisions relating to the novelty requirement, encourages individuals and companies, both domestic and foreign, to take decisive and affirmative steps in pursuing patent protection in Korea. Having made the investment in obtaining patents in Korea, companies are similarly encouraged to make and promote their wares in Korea—activities which promote economic growth.

d. The “Inventive Step” Requirement

“Inventive step,” which is analogous to the concept of non-obviousness in U.S. patent law, refers to the level of creativity associated with the invention and requires that the inventive progression from prior art be non-obvious.⁴² It is “an academic concept that means the degree by which those skilled in the art cannot easily invent given the technical standard at the time of the patent application.”⁴³ The basis for the requirement of an “inventive step” is found in Article 29.2 of the Korean Patent Act, which provides that no patent for an invention may be granted if the invention “could easily have been made before the filing of a patent application by a person with ordinary skill in the art to which the invention pertains.” The provision encourages substantive invention of new and innovative products, the introduction of which into the consumer marketplace will encourage economic development.

The phrase “art to which the invention pertains” generally places limitations on the industrial field that can provide the basis for rejecting patent applications for lack of inventive step. Recently, however, it has been recognized that technologies are being increasingly used beyond their original purposes.⁴⁴ As a result, the scope of technologies that can

in public use or on sale in this country, *more than one year* prior to the date of the application for patent in the United States (emphasis added)).

42. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 4.

43. *Id.* at 55.

44. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 56.

be relied upon to assert that an invention fails to possess an “inventive step” is becoming broader.

An invention generally satisfies the “inventive step” requirement if it can be categorized within one of six general types of inventions recognized under Korean Law. Those types of inventions are: (i) collective inventions; (ii) replacement or conversion inventions; (iii) use inventions; (iv) utilization inventions; (v) selection inventions; and (vi) number- or form-restricted inventions.⁴⁵

A combination invention is an invention that collects and combines past technologies in a way that improves them.⁴⁶ In order for an invention to be a patentable “combination,” and not simply an unpatentable “collection,” there must have been a special hardship in the process of combining the past technologies, the invention must produce a greater effect than expected from the past technologies, and it must not have been “easily inventable” by those skilled in the art.⁴⁷ Alternatively, a new technical method must have been added.⁴⁸ A “use invention” is an invention based on the discovery of a specific new use of a previously existing matter.⁴⁹ A “utilization invention” is an invention derived from adding new elements to a previously patented invention.⁵⁰ Simply replacing certain elements of the previously patented invention with equivalent elements, however, does not constitute an “inventive step.”⁵¹ It is also interesting to note that ownership of the patent rights in a utilization invention is based on ownership of the patent rights in the prior invention, not on the invention of the new element.⁵² A “selection invention,” which is specific to the chemical arts, is an invention in which “unspecified species are selected as an element of a publicly known invention of which all or part of the elements are expressed in a genus.”⁵³ A “number-restricted invention” or “form-restricted invention” is an invention derived from limiting or otherwise changing a quantitative aspect or form of publicly known technology,⁵⁴ including, for example, restricting an invention that may be expressed numerically by specifying a numerical limitation, such as length, weight temperature, angle, or

45. *Id.* at 59–61.

46. *Id.* at 59.

47. *Id.* at 59–60.

48. *Id.* at 60.

49. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 60.

50. *Id.*

51. *Id.*

52. *Id.* at 61.

53. *Id.*

54. *Id.*

ratio.⁵⁵ If the specified numerical limitation falls within a working range as determined by those with skill in the art, however, the technology does not possess “novelty.”

B. Ownership and Transfer of Patent Rights

Creating an open marketplace for intellectual property rights encourages their development and increases their value. Korea achieves an open marketplace under its patent law by providing that patents and their associated rights are freely assignable and otherwise transferable. The following describes how the Korean Patent Act provides for the creation of patent rights and treats those rights as valuable, transferable assets.

The right to obtain a patent, and the rights associated with a patent that is already issued, receive unique treatment under the Korean Patent Act. The right to obtain a patent is established under Article 33 of the Korean Patent Act.⁵⁶ This right comes into existence upon completion of the invention and lasts until a patent right is either created or abandoned.⁵⁷ Although the right to obtain a patent is originally created in the inventor, it can be exercised by a successor.⁵⁸ An “inventor” is a person who “made the invention” by directly participating in the creative act of invention.⁵⁹ As the level of technological sophistication grows, collaboration in inventive activity frequently increases. Therefore, the Act recognizes that multiple individuals can also contribute to the creative act of invention and are considered “joint inventors.” Each joint inventor’s share in the patent is based upon the inventor’s contribution to the invention.⁶⁰ In order to reduce uncertainty in this regard, Korean law recognizes that an individual’s share in the issued patent can be determined in advance by agreement.⁶¹

All joint inventors must participate in the filing of a patent application.⁶² Under this rule, if even one inventor objects, the application cannot be

55. *Id.*

56. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 69.

57. *Id.* at 70.

58. *Id.*

59. *Id.* at 72 (this definition of inventor thereby excludes, for example, assistants, advisors, and lenders).

60. *Id.* at 73.

61. *Id.*

62. *Id.* at 72.

filed. If an application is nevertheless filed and a patent is subsequently issued, the objecting inventor can serve as something of a “poison pill” by providing grounds for invalidation or cancellation.

In Korea, it is common for an invention to be attributable to two or more inventors. In those circumstances, each inventor is considered a joint owner of the patent or patent application.⁶³ An owner may assign an individual share in the right to a patent, however, without the consent of all the other owners.⁶⁴ While the ability to assign partial ownership rights includes the potential for disruption, it does not appear to create noticeable disruption or litigation in Korea.

C. Patent Prosecution

Patent prosecution, or the process of obtaining a patent, inherently promotes economic development because it requires full disclosure of the invention. Thus, once a patent expires, the public is allowed to make full use of the invention. Just as importantly, the public is entitled to view the underlying technical aspects of the invention and make improvements thereon, even while the patent remains in force. The following describes the patent prosecution process in Korea, which has been devised to ease and encourage patent filing.

1. Filing an Application

Under the Korean Patent Act, the right to obtain a patent arises automatically once the invention is completed. A patent right, however, is not created unless an inventor or a legitimate successor takes the affirmative right of filing a patent application.⁶⁵ Submission of an application becomes effective as of the date the application is received by the Korean Intellectual Property Office.⁶⁶

An application for a patent must include the following four general components: (i) an official application form; (ii) a specification; (iii) drawings; and (iv) an abstract.⁶⁷ These submissions must be in

63. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 71.

64. *Id.*

65. *Id.* at 77 (“[A]n inventor has the right to a patent but he/she must apply for it and perform necessary procedures in order to be granted a patent.”).

66. *Id.*

67. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 77.

writing and in the Korean language.⁶⁸ A sample of the invention may be included with the application, but is not required.⁶⁹

The official application form must provide the name and address of the applicant and the inventor (and business agent, if applicable) and the title of the invention.⁷⁰ The specification should also include the title of the invention, as well as a brief explanation of the drawings, a detailed explanation of the invention, and a patent claim.⁷¹ The subject matter described in the claims defines “the scope of protection conferred by a patented invention.”⁷² The abstract should summarize the technical area, purpose, construction, and effect of the invention within certain prescribed character limitations.⁷³

In 1999, KIPO inaugurated a system, called KIPOnet, that permitted patent applicants to file applications electronically, making KIPO the first patent office in the world to provide for electronic filing of patent applications. So successful was the initiative in facilitating access to patent filing that by 2002, all of KIPO's patent administration system had become paperless.⁷⁴ The world's leading patent offices, including the U.S. Patent and Trademark Office, the Japan Patent Office, and the European Patent Office, have since followed suit.

2. *Unity of Invention*

Generally, the Korean patent system follows the rule of “one invention, one application.” A group of inventions forming a “single general inventive concept,” however, may be included in a single application.⁷⁵ In order to form a single general inventive concept, the inventions must be related technologically and share a technological feature that represents an improvement over the prior art.⁷⁶ If an examiner determines that an application includes more than one invention, an applicant may file a separate application to pursue a patent for one of

68. *Id.* at 77–78.

69. *Id.*

70. *Id.* at 78.

71. *Id.* at 79.

72. Korean Patent Act, art. 97 (2009).

73. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 82.

74. KOREAN INTELLECTUAL PROPERTY OFFICE, DYNAMIC IP OFFICE: ANNUAL REPORT 2008–2009, at 27–28, *available at* <http://www.kipo.go.kr/kpo/eng/>.

75. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 90.

76. *Id.* at 91.

the other inventions. Although a violation of the “one invention, one application” rule can provide grounds for refusal to grant a patent, it cannot be the basis for invalidating a patent that has already been issued.⁷⁷

3. *Amending an Application*

The Korean patent system generally provides for two types of amendments to a patent application—procedural amendments and substantive amendments.⁷⁸ The primary purpose of a procedural amendment is to cure defects associated with the filing of an application. Procedural amendments are easily effected and liberally accepted by KIPO. Common instances include the filing of an application by an individual without legal capacity (such as a minor), failure to include a power of attorney or comply with various formalities prescribed by the Korean Patent Act, and lack of payment of official fees.⁷⁹ Procedural amendments can be effected at any time while a patent application is pending.⁸⁰

The primary purpose of a substantive amendment is to change the actual content of a patent application, such as by amending the detailed description, drawings, or the claims. As is common in the patent systems of many other countries, a patent application cannot be substantively amended to include new items.⁸¹ A “new item” is generally anything that is not included within the scope of the description or drawings originally attached to the application.⁸² Similarly, claims can only be amended if their scope is reduced, erroneous statements are corrected, or unclear statements are clarified.⁸³ Examples of amendments to an application which reduce the scope of the claims include deleting claims and adding additional limiting elements to claims.⁸⁴ Amendments to clarify statements are permitted if requested by the patent examiner.⁸⁵

77. *Id.*

78. *Id.* at 92.

79. *Id.* at 93.

80. *Id.*

81. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 93.

82. *Id.*

83. *Id.* at 94.

84. *Id.* at 95.

85. *Id.* at 95.

4. Patent Examination

The examination of a Korean patent application—the process of determining whether an invention meets the patentability requirements of novelty, inventive step, and industrial applicability—commences only upon a formal request by the applicant.⁸⁶ The Korean Patent Act further provides that once a request for examination is made, examination must be completed within five years from the filing date of the application.⁸⁷ Examination of a patent application can be expedited under the process of “preferred examination.” Preferred examination may occur at the direction of the Commissioner of KIPO if the invention is already in commercial or industrial use.⁸⁸ Once examination is requested by an application, however, the request for examination cannot be withdrawn.⁸⁹ If an application is refused, the examiner must set forth the specific grounds for refusal with respect to each pending claim.⁹⁰ These grounds include: (i) the invention is not patentable; (ii) the applicant is not eligible to file a patent application for the claimed invention; (iii) the application violates a recognized treaty; (iv) the description is defective; (v) more than one invention is claimed; (vi) new items have been added to the application; and (vii) the application (such as in a divisional application) exceeds the scope of the description and drawings of the original application.⁹¹

As will be discussed in Part III, below, KIPO is currently reviewing and revising its patent examination system. It has recently introduced procedures that make patent examination unusually applicant-friendly, in keeping with its commitment to encourage ease of access to the patent system.

C. Enforcement of Patent Rights

The teeth of a country's patent law are in its provisions for enforcement. Adequate enforcement provisions are essential to a patent system's ability to provide an economic stimulus because, without the

86. *Id.* at 120.

87. *Id.* at 121.

88. *Id.* at 122. See *infra* Part II discussion of *Customer-Tailored Examination*.

89. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 122.

90. *Id.* at 127.

91. *Id.*

ability to prevent others from infringing the exclusive rights granted by a patent, the incentive to invest in technological innovation is greatly diminished. The enforcement provisions of the Korean Patent Act, which comply fully with international standards and are not dissimilar from those of the United States, go far in ensuring that the owners of Korean patents will be able to enjoy the benefits of the patent grant.

Once a patent is granted, the patentee has the exclusive right to use, and prevent others from using, the invention either commercially or industrially.⁹² The term of a Korean patent commences on the registration of the patent and expires twenty years after the filing date of the patent application.⁹³ That term may be extended for up to five years if, as is often the case with pharmaceutical products, the invention could not be commercialized for an extended period due to clinical or safety testing or the need to seek regulatory approval.⁹⁴

There are serious consequences for infringing a patent right under the Korean Patent Act. A patentee is entitled not only to an injunction to prevent the infringing activity, but also to demand destruction of the infringing articles,⁹⁵ and a patent infringer is subject not only to damages,⁹⁶ but also to criminal sanctions, including imprisonment.⁹⁷

In an effort to balance the incentive granted by a patent with the desire not to inhibit continued innovation, the Korean Patent Act creates several exceptions to a patentee's exclusive right to use a patented invention. Although the U.S. Patent Act does not have analogous exceptions, they exist in the patent legislation of most industrialized countries. The two most important exceptions are for use of a patented invention for research or testing purposes, and to maintain the rights of third parties

92. Korean Patent Act, art. 94 (2009); *see also id.* art. 97 (“the scope of protection of a patented invention is determined by the subject matter described in the claim”). In accordance with art. 127 of the Act, any of the following:

[I]s considered to infringe a patent right or an exclusive license:

(i) an act of making, assigning, leasing, importing or offering for assignment or lease articles used exclusively for producing an invented product; or
(ii) an act of making, assigning, leasing, importing, or offering for assignment or lease articles used exclusively for working an invented process.” [“leasing” and “lease” should be interpreted to mean “selling” or “sale,” respectively.]

Id.

93. *Id.* art. 88.

94. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 139.

95. Korean Patent Act, art. 127 (2009).

96. *Id.* art. 128 (damages may be calculated on the basis of a reasonable royalty, on the amount of profits gained by the infringer, or the monetary loss suffered by the patentee).

97. *Id.* art. 225 (criminal sanctions for patent infringement do not feature in U.S. law).

who used an invention prior to the patentee's application filing date.⁹⁸ In those instances, there is no liability for infringement. Similarly, in order to ensure that patented inventions continue to contribute to Korea's economy, Article 107 of the Patent Act provides that a third party may apply for a non-exclusive license to work a patented invention that for a period of three years has not been commercialized or exploited sufficiently to meet demand in the country.

The Korean Patent Act has served the country well. It sets high standards for patentability yet makes the act of filing patent applications accessible to all and simplifies the acts of licensing and assigning patents. Similarly, the Act provides a broad set of exclusive rights, an effective patent term, and strong enforcement mechanisms, but it also balances the interests of third-parties, especially researchers and prior users, who need to make use of patented inventions. As evidenced by the large number of times the Act has been amended, its success is due, at least in part, to the attention it has received from KIPO and the Korean Government, which seemingly have made the goal of an effective patent law an important national priority.

D. Invention Promotion

In addition to enacting a modern patent law, the Korean government has taken far-ranging legislative measures to promote the development of technology that can be patented. In particular, in 1994 Korea established a governmental agency called the Korean Invention Promotion Association (KIPA) and enacted the Korean Invention Promotion Act.⁹⁹ That the government actively recognizes and encourages support for the importance of intellectual property in Korean society is reflected in the fact that May 19 is officially acclaimed as "Invention Day."¹⁰⁰ In particular, Article 5 of the Korean Invention Promotion Act specifies that every year on Invention Day, the government will hold ceremonies "for the purpose of instilling the importance of invention in [the] public as well as to encourage the willingness to invent."¹⁰¹

98. KOREAN INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 26, at 135.

99. English translation furnished by the Intellectual Property Attaché, Embassy of the Republic of Korea (copy on file with authors). KIPA was established under art. 52 of the Korean Invention Promotion Act. *Id.*

100. *See* KIPA, art. 5.

101. *Id.*

The establishment of a national day for promoting inventions and many of the other provisions of the Korean Invention Promotion Act are the result of specific efforts by KIPA. According to its chairman, KIPA “is an organization [specializing] in promoting [Korea’s] intellectual property rights and commercialization for patent technology under Article 52 of the Invention Promotion Act, fulfilling its mission of implementing projects in the interest of inventors [within an] efficient system.”¹⁰² In addition to proposing legislation, KIPA has instituted various concrete programs. Those programs include providing funding and training for the research and study of intellectual property rights in Korea as well as for the active encouragement of technology transfer and the development of new patented technologies.¹⁰³

In addition to hosting a number of exhibits, events, and competitions on Invention Day,¹⁰⁴ KIPA actions include:¹⁰⁵

- Providing financial support for pilot product manufacturing and technology transfer;
- Promoting the use of patented technologies by operating and maintaining a market for their exchange;
- Educating about patent rights by conducting training courses and offering a free international online cyber academy;
- Facilitating conflict-resolution;
- Analyzing and providing data on various intellectual property matters; and
- Operating and managing the Korean Intellectual Property Research Center as a centralized, publicly-available center for invention and patent services.

Even the logo used by KIPA to identify and distinguish itself was developed for the purpose of promoting an inventive spirit:



102. See KIPA, Message from the Chairman, http://www.kipa.org/english/about/about_message.jsp (last visited Mar. 18, 2010).

103. *Id.*

104. See KIPA, Key Biz, http://www.kipa.org/english/about/about_keybiz.jsp (last visited Mar. 18, 2010).

105. *Id.*

According to the agency's website, "The symbol represents a simplified image of the whole pattern of the armillary sphere, and its heart shape represents human love . . . the primary blue color symbolizes fresh ideas and a clear spirit, while the small circle in the lower part represents humans and the earth."¹⁰⁶

While the establishment of "Invention Day" may be largely symbolic, the Korean Invention Promotion Act also contains a number of provisions that concretely promote the creation of patentable technology. Among those provisions are the payment of government subsidies to reward individuals or corporations who obtain patents,¹⁰⁷ programs designed to encourage women to invent,¹⁰⁸ restructuring employee's rights to inventions developed in the workplace,¹⁰⁹ the establishment of provincial intellectual property centers,¹¹⁰ facilitating the commercialization of inventions,¹¹¹ and providing for the mediation of intellectual property disputes.¹¹²

With respect to employee invention laws, the Korean Invention Promotion Act is exceptional for its explicit protection of employees and support of employee inventive activity.¹¹³ In particular, the Korean Invention Promotion Act recognizes that employees are entitled to receive reasonable remuneration in exchange for assigning their rights in intellectual property to employers. Article 16, for example, specifically requires an employer to "compensate fair reward [to an] employee for his/her invention when succeeding a right to an invention."¹¹⁴

106. See KIPA, KIPA C.I., http://www.kipa.org/english/about/about_ci.jsp (last visited Mar. 18, 2010). KIPA is further discussed *infra* Part III.

107. KIPA, art. 4.

108. *Id.* art. 8.

109. *Id.* arts. 10–13, 15–19.

110. *Id.* art. 23.

111. *Id.* arts. 28–40.

112. *Id.* arts. 41–49.

113. Among industrialized countries, Germany and Japan also have legislation that requires the payment of compensation as a matter of right to employee inventors. See Gesetz über Arbeitnehmererfindungen (German Law on Employee Inventions), July 25, 1957, as last amended by the Law of June 24, 1994, available at <http://bundesrecht.juris.de/bundesrecht/arbnerfg/gesamt.pdf>, (English trans., available at <http://www.wipo.int/clea/docs/new/pdf/en/de/de039en.pdf>) (up to and including the 1994 amendments); Japan Patent Act, No. 121 of 1959, (as amended), art. 35, available at <http://www.cas.go.jp/jp/seisaku/hourei/data/PA.pdf>.

114. KIPA, art. 16.

Prior to the enactment of this provision in the Korean Invention Promotion Act, the Korean courts had issued a series of decisions that granted substantial awards to employee inventors.¹¹⁵ The standard governing the level of compensation to which employee inventors were entitled was “just compensation.” Article 16 was implemented to clarify the levels of compensation by replacing “just compensation” with the current standard of “fair compensation.”

The Act does not, however, contain specific provisions establishing guidelines for determining “fair compensation”; in fact, such provisions are conspicuously absent. Instead, the law allows companies to determine their own guidelines for “fair compensation,” with the understanding that such compensation schemes would be evaluated in the courts as disputes arose. The methodology adopted by the courts for determining the compensation that employees should receive from their employers tends not to focus on absolute amount, but rather analyzes whether the process leading up to the determination was fair.¹¹⁶ As Korean commentators have described:

The courts will deem a compensation scheme to be fair if it meets certain criteria. It must have been developed following discussions between the employer and employees, it must have been adequately notified to the employees, and the employees must have been given an opportunity to express their opinions when the level of compensation for a specific invention is decided. If a scheme meets these criteria, then the courts will not interfere with the level of compensation awarded under it.

On the other hand, if a company has no guidelines, or if it did not follow the appropriate procedures, then the employee will be compensated in accordance with the present legislation. This exposes companies to a greater risk of having to deal with litigation brought by employees unhappy at the level of remuneration offered to them.¹¹⁷

One of the effects of the Korean Invention Promotion Act with respect to employer-employee relations, therefore, has been to promote the transparency of compensation due to inventions, which has seemingly had a positive impact on employee inventive activity.

115. See Chun Y. Yang & Eun-Jin Jung, *South Korea: Korea Proposes Overhaul to Employee Invention Laws*, MANAGING INTELL. PROP., Oct. 1, 2005, at 60, available at <http://www.managingip.com/Article/1254912/Korea-proposes-overhaul-to-employee-invention-laws.html>.

116. *Id.*

117. *Id.*

IV. ROLE OF KIPO IN PROMOTING TECHNOLOGICAL
DEVELOPMENT

KIPO, a “central executive agency”¹¹⁸ with a staff of 1,511,¹¹⁹ has a broad and ambitious mission. It does not view itself “simply as a system confined to administrative activity,”¹²⁰ but rather as a comprehensive organization with a mission “to enhance technological innovation and industrial development by facilitating the creation, commercialization, utilization, and protection of [intellectual property].”¹²¹ As the current Commissioner of KIPO, Jung-Sik Koh, stated, “Our mission is to help Korea become an advanced country, by providing legal and institutional administration with regard to the creation and utilization of highly creative, value-added intellectual property and by promoting technological innovation and industrial development.”¹²²

KIPO's mission of facilitating use of the patent system to promote development far exceeds that of other intellectual property offices, and it is one that the patent offices of other emerging countries would do well to consider. While KIPO sees its functions as involving capacity building through direct interaction with Korean enterprises, most patent offices see their functions limited largely to patent examination, patent promotion, and administration of the patent laws. For example, although the mission of the United States Patent and Trademark Office (USPTO) “is to ensure that the intellectual property system contributes to a strong global economy, encourages investment in innovation, and fosters

118. See KIPO, KIPO's History, <http://www.kipo.go.kr/kpo/eng/> (last visited Mar. 18, 2010). Although created in 1949, KIPO came into its own in 1977 when it was re-established as an external administration of the Ministry of Commerce and Industry. Its legal status changed in 2006 to that of a central executive agency, reporting directly to the Prime Minister and the Minister of Knowledge Economy. *Id.*

119. ANNUAL REPORT 2008, KIPO, at 15, <http://www.kipo.go.kr/kpo/user.tdf?a=user.english.html.HtmlApp&c=60109&catmenu=ek60101> [hereinafter ANNUAL REPORT].

120. Keun Lee et al., *Industrial Property (IP) Rights and Technological Development in the Republic of Korea 5* (2003) (study sponsored by the Korean Intellectual Property Office and the World Intellectual Property Organization, on file with authors), available at http://www.keunlee.com/modules/board/bd_view.html?no=12&id=eng_research_book&p=1&or=bd_order&al=asc.

121. See VISION AND GOALS, KIPO, *supra* note 74.

122. See KIPO, Welcome to KIPO (May 2008), *supra* note 74, <http://www.kipo.go.kr/kpo/eng/>. The Commissioner has also stated that KIPO is “striving to transform our manufacturing-intensive society into an intellectual property-intensive nation.” ANNUAL REPORT, *supra* note 119, at 9.

entrepreneurial spirit,” the statement narrowly defines the office’s functions as follows:

The USPTO promotes industrial and technological progress in the United States and strengthens the national economy by: Administering the laws relating to patents and trademarks. Advising the Secretary of Commerce, the President of the United States, and the administration on patent, trademark, and copyright protection. Advising the Secretary of Commerce, the President of the United States, and the Administration on the trade-related aspects of intellectual property.¹²³

In 2003, the European Commission issued a report entitled, “Role of national patent offices, the European Patent Office, as well as the Japanese and US patent offices in promoting the patent system,”¹²⁴ which, by contrast, underscored the unique expansive nature of KIPO. The report found that the patent offices in the study tended to focus their promotional activities on raising general awareness about patents¹²⁵ and providing training that “is generally limited to developing the skills of users already familiar with the patent system.”¹²⁶ The report concluded that the patent offices were not providing the sorts of “promotional activities aimed at stimulating ‘action’,” which “should preferably involve personalized activities or face-to-face contact.”¹²⁷ According to the report, “Most [national patent offices] seem ill equipped to provide such tailored and personal services, which may be a prerequisite for the effective participation of small users, [small and medium-sized enterprises] and private inventors, in particular, in the patent system.”¹²⁸ KIPO has not only established that it is well equipped to provide “tailored and personal services,” it has embraced the need “[t]o reinforce the basis of IP protection”¹²⁹ as one of its strategic goals and produced a

123. USPTO, *Our Business: An Introduction to the USPTO, Mission*, United States Patent and Trademark Office, <http://www.uspto.gov/web/menu/intro.html>. The mission of the Japan Patent Office defines the office’s purpose and objectives in a fashion even narrower than that of the USPTO: “To become an organization with enthusiastic people who can flexibly and quickly respond to changes in the IP environment.” See Japan Patent Office, *JPO’s Vision*, http://www.jpo.go.jp/cgi/linke.cgi?url=/shoukai_e/soshiki_e/jpo_vision_e.htm.

124. IBM, *ROLE OF NATIONAL PATENT OFFICES, THE EUROPEAN PATENT OFFICE, AS WELL AS THE JAPANESE AND US PATENT OFFICES IN PROMOTING THE PATENT SYSTEM: FINAL REPORT TO THE EUROPEAN COMMISSION*, Feb. 14, 2003, available at http://ec.europa.eu/internal_market/indprop/docs/patent/studies/offices_en.pdf.

125. *Id.* at 6.

126. *Id.*

127. *Id.*

128. *Id.*

129. KIPO, *supra* note 74, *Visions and Goals*. Strategic Goal No. 3 contains the following performance goals:

To facilitate the utilization of patent information to increase the overall productivity of R&D projects; To strengthen the capability of universities and public research institutes with regard to the creation and management of IP.

host of highly effective patent-related services, programs, and institutions that, by facilitating the rapid accumulation of technological capacity, have had a significant impact on Korean industrial development. The remainder of this section will detail some of Korea's noteworthy initiatives, including assistance to small- and medium-sized enterprises, providing broad-based education and training, and establishing a host of applicant-friendly patent office policies.

A. Assistance to Small and Medium-Sized Enterprises

The largest focus of KIPO's attention has been directed toward small- and medium-sized enterprises (SMEs).¹³⁰ SMEs are often the backbone of economic development in emerging economies and, according to two recent studies, tend to be more reliant on patents for their survival than larger companies;¹³¹ however, SMEs generally have a poor understanding of the patent system.¹³² Developing the patent capacity of SMEs should therefore be an important part of any patent office's agenda, but the economic history of Korea has made a focus on SMEs especially relevant for KIPO. Large conglomerates (for example, Samsung and LG), called *chaebols*, have traditionally dominated economic growth in Korea. A Korean financial crisis in 1997 caused approximately one-third of the top thirty *chaebols* to go bankrupt,¹³³ however, and that crisis both allowed SMEs to increase their share in the economy and pointed to their importance in ensuring the nation's longstanding financial wellbeing.¹³⁴ KIPO's SME-focused activities thus not only target an important sector of the economy particularly needy of assistance, they also help advance the goal of diversifying the economy.

To build the basis of patent management by strengthening the IP competence of SMEs; To enlarge the foundation for raising excellent IP experts.

Id.

130. An additional important focus has been universities and public research institutes. In order to strengthen patent capacity, about twenty KIPO patent management advisors service the IP needs of universities and research institutes by, among other things, carrying out patent asset assessments. In addition, KIPO established an online University Intellectual Property Center to enable university technology transfer managers to communicate and exchange ideas. ANNUAL REPORT, *supra* note 119, at 33.

131. See Zink, *supra* note 9, at 24.

132. Lee, *supra* note 120, at 40.

133. Lee, *supra* note 2, at 15. The surviving *Chaebols* were able to withstand the crisis, at least in part due to their technological capacities. *Id.*

134. Lee, *supra* note 120, at 40.

To maximize access to SMEs, KIPO has established Regional IP Centers throughout the country. Twenty-nine centers were operating in 2008. The centers, staffed by patent specialists, provide patent consulting services to SMEs in the areas of technology development, patent information analysis, and commercialization. According to the KIPO 2008–2009 Annual Report:

A patent information consultation provides customized searches for patent trend analysis and technology direction and also for preventing duplicate and redundant investment as well as patent disputes. A patent commercialization consulting service matches potential licensees with potential licensors for a successful technology transfer by using KIPO's database.¹³⁵

The consultations are not offered to all SMEs, but only to those that, on the basis of a preliminary diagnosis, KIPO determines demonstrate sufficient innovative capability and are likely to contribute to economic growth.¹³⁶ The selected SMEs not only receive in-depth, tailor-made consultation services, but if they find themselves confronting “IP challenges,”¹³⁷ they are entitled to the services of an “IP Management Support Dream Team,” which consists of at least one patent agent, lawyer, and professional engineer, to help them address the challenges.¹³⁸

Although only select SMEs qualify for customized consulting, all SMEs are entitled to take advantage of the expertise of KIPO and the Regional IP Centers and to benefit from patent education programs that focus on the training of SME in-house patent specialists. A particularly innovative service is available to SMEs with significant patent assets but insufficient funds. For such enterprises, KIPO provides a patent valuation service so that the SMEs can use their intellectual property as security to obtain loans.¹³⁹

KIPO also administers a technology transfer trading system. It provides “patent trade experts” who help SMEs find technology transfer partners, and it manages an on-line database, called “IP-Mart,”¹⁴⁰ where potential licensors can list their patents, and potential licensees can

135. ANNUAL REPORT, *supra* note 119, at 37.

136. See *id.* at 34. Under the program, Regional IP Center specialists visit and SME and carry out the diagnosis. If an SME is selected, “special staff members of KIPO visit and provide IP management consulting.” *Id.* In 2008, 147 SMEs received consulting services, seventy SMEs received intensive support, and the centers provided some form of consultation advice approximately 5,900 times. *Id.* at 35.

137. *Id.* at 37. Presumably, “IP challenges” include litigation or threats of litigation, as well as difficulties in prosecuting patent applications or licensing patents. *Id.*

138. *Id.*

139. *Id.* at 33.

140. IP Mart, at <http://www.ipmart.or.kr> (Available in Korean) (last visited Mar. 18, 2010).

search for patents using technology matching software.¹⁴¹ A new addition to IP-Mart concerns a policy relating to unexploited government-owned patents. To promote the use of government-owned technology, a qualified Korean enterprise may obtain a one-year royalty-free license to exploit a patent that has remained idle for three years following registration. Royalty payments for the following three years are subject to a 50% reduction.¹⁴²

In addition to the Regional IP Centers, KIPO maintains a Patent Consulting Center in Seoul, which operates very much like a legal aid clinic. With the objective of serving individuals and enterprises who cannot afford private representation, the center's attorneys offer free consultations and advice on patent applications and proceedings. The center began operations in April 2005 and initially provided an average of 154 consultations a month. By the end of 2007, the number of consultations had increased to 430 a month, or a yearly total of 5,160.¹⁴³

Even more ambitious is the KIPO Center for Overseas Protection of IPRs, the purpose of which is to protect the interest of Korean companies that possess patent rights in foreign countries. The center not only investigates alleged infringements against Korean companies and provides free advice to companies that are faced with infringement, it also subsidizes the costs of instituting and maintaining lawsuits, including the costs of trial, when Korean companies take action against foreign infringements.¹⁴⁴

B. Education and Patent Information

Affiliated with KIPO are three organizations that share the objective of using the patent system to promote economic development. Those organizations are the International Intellectual Property Training Institute (IIPTI), the Korean Invention Promotion Association (KIPA), discussed above, and the Korean Institute of Patent Information (KIPI). Together these organizations form a tightly integrated and highly effective web of support for Korean patent policy.

141. ANNUAL REPORT, *supra* note 119, at 33.

142. *Id.*

143. KIPO, ANNUAL REPORT 2007, at 44, <http://www.kipo.go.kr/kpo/user.tdf>.

144. Figures were not available on the number of foreign infringement actions that the Center for Overseas Protection of IPRs had subsidized. *Id.* at 45.

1. IIPTI

IIPTI, a “sub-organization” of KIPO, is committed to providing broad-based public education in intellectual property. Going well beyond the mandate of most patent offices to provide training only to patent examiners, IIPTI has a “twofold objective of helping domestic and international intellectual property professionals become leaders of the knowledge-information society and laying the foundation for the creation of IP through the promotion of invention education.”¹⁴⁵ In carrying out its objective, IIPTI provides an impressive number of training courses and programs directed at the private sector, including custom-tailored programs offered at the headquarters of Korean companies. Typical IIPTI courses include a basic understanding of the patent application and litigation process, ability to decipher and make best use of patent specifications, patent mapping, and practical use of patent information.¹⁴⁶

A unique feature of IIPTI is its focus on invention education and the creation of intellectual property awareness in students as young as those in primary school. Through its Invention Education Center, IIPTI has created school-based curricula and study materials, which together with teacher education resources, encourage and hone skills in creativity and inventive activity as well as provide rudimentary training in patent law and the patent process. With a primary purpose of cultivating future “leaders of the knowledge-based world,”¹⁴⁷ the IIPTI curricula have been welcomed and well integrated in Korean classrooms nationwide.

The success of IIPTI has caused it to look outward and expand its international training offerings. IIPTI has organized multilateral programs in conjunction with the World Intellectual Property Organization (WIPO),¹⁴⁸ the Association of Southeast Asian Nations (ASEAN), Asia-Pacific Economic Cooperation (APEC), and the South Asian Association for Regional Cooperation (SAARC), and it has carried out bilateral activities in cooperation with institutions in Azerbaijan, Brazil, China,

145. International Intellectual Property Training Institute, IIPTI Training Service Charter (2009), <http://www.iipti.org/> [hereinafter IIPTI].

146. *Id.* (Training Programs). It should be noted that IIPTI also provides extensive patent attorney training, including a thirty-five day course for all those who passed the Korean patent attorney exam. *Id.*

147. *Id.* (Greeting).

148. Those programs include a 2006 regional seminar on the Patent Cooperation Treaty at which one of the authors of this article (Jay A. Erstling) was a principal instructor. See *supra* note *.

Malaysia, and Vietnam.¹⁴⁹ In 2006, IIPTI was designated a “WIPO Partner,” which resulted in IIPTI assuming increased regional leadership responsibility for intellectual property training and education.

2. KIPA

IIPTI works in close cooperation with KIPA, the invention promotion organization discussed above, to benefit from KIPA's expertise in the development of online and e-learning training materials, some of which are international in scope. Two KIPA projects organized in conjunction with WIPO, KIPO, and IIPTI have received especially wide coverage. One, the *IP Panorama*, is an English-language e-learning program that provides intellectual property understanding and instruction to businesses.¹⁵⁰ The other, *PCT-ROAD*, is a software program for use by small national patent offices that provides detailed instructions on how to receive and process international applications filed under the Patent Cooperation Treaty (PCT).¹⁵¹ KIPA's most recent project is *IP Xpedite*, which is being carried out in conjunction with APEC and aims to enhance patent awareness and use of patent information within the APEC region.¹⁵²

Since 2008 KIPA has hosted the “IP Academy,” a national intellectual property education portal that houses the country's principal online intellectual property learning programs.¹⁵³ In its first year of operation, the IP Academy offered approximately 140 online programs and approximately 270,000 people participated in at least one of them.¹⁵⁴

149. IIPTI, *supra* note 145 (International Activities). In 2008, for example, IIPTI organized seven international seminars for 129 participants. *See* ANNUAL REPORT, *supra* note 74, at 43.

150. ANNUAL REPORT, *supra* note 74, at 44. It is interesting to note that the first segment of the *IP Panorama* begins with an analysis of why intellectual property is important to SMEs.

151. ANNUAL REPORT, *supra* note 74, at 29. The PCT, a treaty administered by WIPO, establishes an international patent application filing system to which 142 countries—most of which possess small, under-utilized and under-resourced patent offices—belong. WORLD INTELL. PROP. ORG., PCT-ROAD, <http://www.wipo.int/pct-safe/en/pctroad/> (ROAD stands for PCT Receiving Office Administration, has been distributed to at least 24 countries) (last visited Mar. 18, 2010).

152. IP Academy.net, IP Xpedite, <http://global.ipacademy.net/> [hereinafter IP Academy] (last visited Mar. 18, 2010).

153. *Id.* (Select: First Visit, About Us for a brief description of IP Academy); ANNUAL REPORT, *supra* note 119, at 43.

154. *Id.*

3. KIPPI

The provision of patent information is another key component in Korea's strategy to use the patent system to promote growth. It is widely accepted that published patents and patent applications constitute one of the best sources of technical information available for carrying out research and development. Searching published patents and patent applications is also an essential step in assessing the potential patentability of inventions. KIPPI, an affiliated public institute of KIPO,¹⁵⁵ was founded in 1995 to provide patent information and thereby "to strengthen national industrial competitiveness and contribute to technological development by providing people (in industries, institutes and academies, and specialists, such as patent attorneys) with domestic and foreign information relevant to [intellectual property rights]."¹⁵⁶

KIPPI has a three-pronged patent information mandate: to provide public service, on-demand service, and support for KIPO. In the first category, KIPPI operates and maintains a free, publicly available internet-based patent document search service, called KIPRIS (Korea Intellectual Property Rights Information Service) that includes all published Korean patent applications.¹⁵⁷ Since 2002, KIPPI has also operated a Patent Customer Call Center to provide free-of-charge telephone and on-line counseling services. Most of the advice sought tends to concern patent application procedures, patent disputes, and instructions on searching patent information, but no question is deemed irrelevant. The call center also maintains what it calls an "Angel Call Service," "whereby counselors call customers beforehand to inform them of major developments regarding their applications";¹⁵⁸ counselors also pay visits to enterprises and schools to provide personalized information about carrying out patent searches and filing patent applications.¹⁵⁹ About 350 counselors are available to serve the public.¹⁶⁰

KIPPI's on-demand activities, carried out under the name "FORX" (Forecast by Reliable Experts), consist of commercial patent research, analysis and evaluation services available to private enterprises, public

155. JaeChon Park, *CEO's Message*, Korean Institute of Patent Information, <http://eng.kipi.or.kr/kipi/overview1.jsp> (last visited Mar. 18, 2010).

156. Lee, *supra* note 120, at 99.

157. Korean Institute of Patent Information, KIPRIS, http://eng.kipris.or.kr/eng/main/main_eng.jsp (last visited Mar. 18, 2010).

158. *Id.*, Patent Customer Call Center, <http://eng.kipi.or.kr/business/business1-2.jsp> (last visited Mar. 18, 2010).

159. *Id.*

160. *Id.*

institutions, and independent inventors. The assistance KIPi provides is extensive, including patentability, state of the art, validity, and freedom to operate patent searches; and competitor, patent trend, and patent landscape analyses.¹⁶¹

There is a fine line between KIPO and its affiliated organizations, and the support that KIPi provides KIPO demonstrates just how fine that line is. Pursuant to Article 58 of the Patent Act,¹⁶² KIPi carries out and analyzes the results of searches of the prior art¹⁶³ as part of the KIPO examination process for all pending Korean patent applications. It also assigns patent classification codes to pending patent applications so that the applications can be assigned to appropriate KIPO patent examination units, correctly filed, and easily retrieved.¹⁶⁴

C. Applicant-Friendly Policies

KIPO Commissioner Jung-Sik Koh has written:

To accomplish [KIPO's] mission, our officials will do their best to help you with fast, accurate, world-class examinations and trials so that your innovative ideas can swiftly come to fruition in the form of intellectual property rights.¹⁶⁵

161. *Id.*; FORX, <http://eng.kipi.or.kr/business/business2-1.jsp> (last visited Mar. 18, 2010).

162. Korean Patent Act, art. 58(1) (2009), provides:

Search for Prior Art etc. (1) If considered necessary for examination of a patent application (including an international search or international preliminary examination), the Commissioner of the Korean Intellectual Property Office may designate a specialized search organization and request it to search for prior art, grant an international patent classification, and conduct other tasks prescribed by Presidential Decree.

Id. See *supra* note 25.

163. Korean Patent Act, art. 29 (2009). The prior art is defined as:

- (i) inventions publicly known or worked within or outside of the Republic of Korea before the filing of the patent application; or
- (ii) inventions described in a publication distributed in the Republic of Korea or in a foreign country before the filing of the patent application or inventions published through electric telecommunication lines as prescribed by Presidential Decree.

Id.

164. It is thus conceivable that a Korean SME may request KIPi's on-demand service to carry out a patentability search on a potentially patentable invention; on the basis of the positive results of that search, the SME will choose to file a patent application; and that patent application will in turn will be searched by KIPi's KIPO support service.

165. KIPO, Welcome to KIPO, <http://www.kipo.go.kr/kpo/eng/> (last visited Mar. 18, 2010).

While such a statement might easily be dismissed as a platitude, the KIPO staff take it seriously, viewing it as their goal to “develop a customer-oriented [intellectual property rights] system.”¹⁶⁶ Consistent with Korean policy, KIPO defines a customer-oriented system as one that “works in harmony with the global economic environment” and “will continue to encourage people to create [intellectual property rights].”¹⁶⁷ KIPO operates on the assumption that responsive, user-friendly policies and procedures promote innovation and the filing of patent applications. It also attempts to model the innovative behavior it expects of its Korean citizens.¹⁶⁸

1. Electronic Filing of Patent Applications

A prime example of Korea’s attempt to encourage innovative behavior among its citizens concerns the electronic filing of patent applications, now common in many patent offices. KIPO moved from Seoul, Korea’s capital and commercial center, to the smaller city of Daejeon¹⁶⁹ in 1998, making it less convenient for the direct filing of patent applications with the office. As mentioned above, KIPO responded in 1999 by introducing “KIPOnet,” the first system for the electronic filing of patent applications, and it achieved a paperless patent administration system by 2002,¹⁷⁰ an accomplishment still not realized in most offices. KIPO is now working on the third generation of “KIPOnet,” which it expects to launch in 2012.¹⁷¹

2. Customer-Tailored Patent Examination

KIPO’s evolving approach toward patent examination is the most recent example of the office’s customer-oriented policymaking. KIPO had earlier adopted a policy that emphasized speed of patent examination, and in 2006 and 2007, the office succeeded in reducing the period of examination leading to the issuance of the first office action (i.e., the first evaluation of patentability) to a world-record time of 9.8 months.¹⁷²

166. *Id.*, KIPO’s Activities, Vision and Goals, Strategic Goal 1.

167. *Id.*

168. Interview with Kuiwou Kwon, *supra* note 7.

169. It’s Daejeon, Relocation of Government Offices to Daejeon and 1993 Exposition, <http://www.daejeon.go.kr/language/english/aboutdaejeon/history/exposition/index.html> (Situated in the middle of the country, Daejeon is the home of several Korean government agencies and several important scientific research institutes.) (last visited Mar. 18, 2010).

170. ANNUAL REPORT, *supra* note 74, at 27–28.

171. *Id.* at 28.

172. *Id.* at 19.

However, a large increase in the number of applications being filed as well as increasing concerns about the quality of the speedy examination results led KIPO to rethink its policy¹⁷³ and on October 1, 2008, it introduced the first-ever three-track, "customer-tailored" examination system.¹⁷⁴

The three tracks that make up the system are accelerated (also known as preferential) examination, normal examination, and deferred examination, and applicants are free to choose among them.¹⁷⁵ Applicants who wish to obtain a patent as soon as possible in order to secure a position in the market or commence an infringement action will gravitate to accelerated examination, in which case they will generally receive first office actions within two to three months of filing the examination request.¹⁷⁶ Examination for applicants who choose the normal route, which presumably constitutes the major bulk of applicants, will generally take sixteen months, a figure that represents an increase over earlier pendency rates but one that is still highly responsive.¹⁷⁷ Applicants who opt for deferred examination get to select the time at which KIPO will commence the examination of their applications—by far the most innovative aspect of the new system—and the time periods from which they may choose range from eighteen months from the date of filing the examination request to five years from the filing date. Customer-deferred examination may appeal to applicants who are not in a rush to obtain patents due to commercialization, marketing, or financial concerns, or who simply wish to reduce the cost of maintaining a patent.¹⁷⁸

According to early statistics published by KIPO, during the period from October through December 2008, demand for accelerated examination remained at fewer than 100 applications a month, but demand for deferred examination increased from 8 applications in

173. A KIPO survey of 1,000 applicants showed that patent examination quality had become "an important concern" and that applicants preferred customer-tailored examination over expedited examination. See *KIPO's Policy Shift from "Fast-for-All" Examination to "Customer-Tailored" High Quality Examination*, KIM & CHANG NEWSLETTER, Summer 2008, at 3, available at http://www.ip.kimchang.com/UserFiles/files/KandC_IP_Summer_2008%5B0%5D.pdf.

174. See Press Release, KIPO *supra* note 165, July 2, 2008 (Providing the customer-tailored patent examination system).

175. *Id.*

176. ANNUAL REPORT, *supra* note 74, at 19–20.

177. *Id.* at 20.

178. *Id.*

October to 695 applications in December.¹⁷⁹ It is too early, however, to predict longer-term trends.¹⁸⁰

V. IMPACT OF KOREA'S PATENT POLICIES

A. *Impact on Korean Economic Growth*

While it is impossible to quantify the degree to which Korea's policy of building patent capacity has contributed to Korea's rapid growth, there is little doubt that Korea's emphasis on creating a patent system that has emphasized capability building and technological development has played a substantial role. A quick look at Korean patent statistics shows that Korean patenting activity has increased and matured as the Korean economy and technological infrastructure grew.

The number of patent applications filed in Korea has grown by more than 9,000 percent since 1970. In that year, when the Korean economy first began to catch up with the economies of the major industrialized countries, the number of patent applications filed was 1,846. The number increased to 78,499 in 1995, and in 2008, the latest year for which figures are available, the total was 170,632.¹⁸¹ Korea now ranks fourth in the number of applications filed worldwide, following only the United States, China, and Japan,¹⁸² and it is the fifth ranked country in terms of the number of patents in force per 100,000 inhabitants.¹⁸³ Both those figures are considered important indicators of a country's competitiveness.

Just as telling is the ratio of Koreans filing patent applications in Korea to the number of foreign applicants. The changes in that ratio parallel the path of Korean economic development.¹⁸⁴ Prior to the 1970s when the Korean economy was still suffering, few foreigners had an interest in obtaining Korean patent rights, and Korean patent applicants

179. *Id.*

180. According to Kui Wou Kwon, IP Attaché, Embassy of the Republic of Korea, KIPO has recently introduced a fourth examination track: "super speed examination," aimed at encouraging advancements in "green technologies" by promising a first office action within one month of the examination request for particular inventions. Memorandum from Kui Wou Kwon (October 2009) (on file with authors).

181. See Korean Intellectual Property Rights Information Service, Statistics, Applications, <http://eng.kipris.or.kr/eng/reference/statistics.jsp> (last visited Mar. 18, 2010); ANNUAL REPORT, *supra* note 74, at 58. In 1965, about the time when Korea first began its development drive, the number of applications was 1,018.

182. WORLD INTELL. PROP. ORG., WORLD PATENT REPORT 2008, at 14, available at http://www.wipo.int/export/sites/www/ipstats/en/statistics/patents/pdf/wipo_pub_931.pdf [hereinafter WIPO].

183. ANNUAL REPORT, *supra* note 119, at 14.

184. See Lee, *supra* note 2, at 17.

outnumbered foreign ones. In 1970, for example, Korean applicants filed 65.4% of applications while foreign applicants filed only 34.6%.¹⁸⁵ As the Korean economy began to develop and foreign enterprises took notice, an influx of foreign investment followed. Foreign patenting activity also increased as Korean enterprises welcomed the importation of needed technology and technical assistance. As a result, foreign patent applicants began to outnumber Korean ones. In 1980, a year in which 5,070 applications were filed, 24.5% of them were filed by Koreans while 75.5% were filed by foreigners. Beginning in 1992, that trend changed again because the capacity of Korean enterprises had improved sufficiently to diminish the need for foreign technology and investment. In 1992, Korean applicants filed 51.3% of the total of 31,073 applications, while foreign applicants filed 48.7%.¹⁸⁶ Since then, the percentage of Korean patent filings has increased to more than 70%: in 2008, Korean applicants filed 127,114, or 74.5%, of the total number of applications filed (170,632).¹⁸⁷

As the Korean economy began its development takeoff and Korean enterprises became technology exporters, Korean applicants increasingly sought foreign patent protection. In 1982, only seven of the 63,381 U.S. patents granted were awarded to Korean applicants.¹⁸⁸ By 2004, that number had jumped to 4,590, and in 2008, it reached 8,410, or 8.65% of the total number of patents granted by the USPTO (90,713).¹⁸⁹ Only Japanese and German applicants received more U.S. patents in 2008 than Korean applicants.¹⁹⁰

An unusually large increase in the number of international applications under the Patent Cooperation Treaty (PCT) filed by Koreans also reflects the growth in Korean technological development. Between 2000 and 2007, Korean PCT filings increased by an average annual rate of

185. *Id.* at 10.

186. *Id.*

187. ANNUAL REPORT, *supra* note 119, at 59. In 2008, U.S. applicants filed 12,389 patent applications in Korea. *Id.* at 65.

188. Lee, *supra* note 120, at 19.

189. UNITED STATES PATENT AND TRADEMARK OFFICE, PERFORMANCE AND ACCOUNTABILITY REPORT, FISCAL YEAR 2008 124 (2009), available at <http://www.uspto.gov/about/stratplan/ar/2008/2008annualreport.pdf>.

190. *Id.* The USPTO granted 35,847 patents to Japanese applicants and 9,794 patents to German applicants. *Id.*

23.9%,¹⁹¹ and with 7,908 applications in 2008, Korea ranked fourth in the number of applications filed.¹⁹² The growth of Korea as a country of origin for PCT applications has solidified the country's place as a major patent filer.

B. Impact on the Status of the Korean Patent System

The Korean patent system is now readily acknowledged as one of the world's most advanced, and Korea has achieved a prominent place in the international patent community. Korea's status as an intellectual property power is readily evidenced by Korea's role as a PCT International Searching Authority, a member of the newly formed "IP5," and a provider of development cooperation assistance to other patent offices.

1. Korea and the PCT

All international applications filed under the PCT undergo an international search of the prior art, which results in the issuance of an international search report and a non-binding written opinion on the patentability of the invention in question. Currently, thirteen patent offices are entrusted to undertake international searches,¹⁹³ and KIPO is one of them. KIPO was appointed to serve as an International Searching Authority by the member countries of the PCT in 1997,¹⁹⁴ and in 2005, based in large part on its reputation for excellence, the USPTO designated KIPO to act as an International Searching Authority for U.S.-originating PCT applications.¹⁹⁵ That designation thrust KIPO into the limelight and greatly increased its status as well as its workload. As a

191. WIPO, *supra* note 182, at 36. In contrast, the average annual increase in the number of US PCT applications was only 4.9%. *Id.*

192. WORLD INTELL. PROP. ORG., PCT: THE INTERNATIONAL PATENT SYSTEM, YEARLY REVIEW: DEVELOPMENTS AND PERFORMANCE IN 2008 10 (2009), available at http://www.wipo.int/export/sites/www/ipstats/en/statistics/pct/pdf/yearly_review_09.pdf. The United States, Japan, and Germany ranked ahead of Korea. *Id.*

193. The International Searching Authorities are the European Patent Office, the national patent offices of Japan, the United States, Korea, Canada, Australia, China, Sweden, Spain, Austria, Russia, Finland, and the Nordic Patent Institute. In addition, the patent offices of Israel, Egypt, Brazil and India have been appointed as International Searching Authorities, but they have not yet begun acting as such. *Id.* at 26.

194. Mee-Sung Shim, *Foreign Searching—KIPO as ISA*, at 1 (2007), available at http://www.aipla.org/Content/ContentGroups/Speaker_Papers/Mid-Winter1/20073/ShimDOC.pdf.

195. World Intell. Prop. Org., *supra* note 192, at 26. KIPO began acting as an International Searching Authority for U.S.-originating PCT applications in 2006. U.S. applicants may also use the USPTO, the European Patent Office, and the Australian Patent Office as a searching authority. *Id.*

result of searching U.S. applications, KIPO is now the fourth largest International Searching Authority.¹⁹⁶ In 2008, it searched 19,167 international applications, which constituted 11.7% of all international applications searched during the year and represented a remarkable 87.3% increase over the number of applications it searched in 2007.¹⁹⁷ It is likely that KIPO did not fully anticipate the success it has achieved, and its adoption of customer-tailored examination described above is partly a response to its desire to maintain quality despite the increased burden.¹⁹⁸ Moreover, in order to provide quality service to U.S. PCT applicants, KIPI (see above), in cooperation with KIPO, created the IP Korea Center, Inc., a U.S. subsidiary company the main mission of which is to service as a PCT Helpdesk in the United States for U.S. applicants.¹⁹⁹

2. The IP5

Since 1983, the USPTO, the Japan Patent Office, and the European Patent Office have met regularly as the Trilateral Offices with the objective of advancing "Trilateral Cooperation."²⁰⁰ In May 2007, at a meeting of heads of patent offices, KIPO and the Chinese State Intellectual Property Office were added to the Trilateral and a new forum, called the "IP5," came into being. The mission of the IP5 is to promote work-sharing among the five offices, which jointly handle about 76% of all patent applications filed worldwide.²⁰¹ In October 2008, a meeting of the heads of the IP5 offices took place at Jeju Island, Korea. The KIPO Commissioner chaired the meeting, during which ten foundational work-sharing projects and a future roadmap for action were adopted.²⁰² KIPO's membership in the IP5 validates its place as one of the world's leading patent offices.

196. *Id.* The European Patent Office, Japan Patent Office, and USPTO are the top three International Searching Authorities. *Id.*

197. *Id.* It is interesting to note that in 2008, the USPTO suffered a 29.9% decrease in the number of international applications it searched as compared to 2007. *Id.*

198. See ANNUAL REPORT, *supra* note 119, at 19.

199. IP Korea Center Inc., FAST AND RELIABLE PORTAL TO INTELLECTUAL PROPERTY RIGHTS (brochure 2009, on file with authors).

200. See Trilateral.net, About Us, <http://www.trilateral.net/about.html> (last visited Mar. 18, 2010).

201. ANNUAL REPORT, *supra* note 119, at 22.

202. *Id.* at 23.

3. Technical Assistance

KIPO has now become a provider of technical assistance and support to developing countries. Working with the World Intellectual Property Organization (WIPO), KIPO has established a Fund-in-Trust to promote “development projects for local economies using [intellectual property], focusing on supporting the products of developing countries to acquire [intellectual property] and providing technology for survival.”²⁰³ It has also created its own patent-based developing country support programs. Those programs have two main objectives: “to support local communities to increase income by utilization of [intellectual property]; and to provide technological solutions for life essentials.”²⁰⁴ The ultimate goal of KIPO’s development assistance program is to help developing countries accomplish what Korea itself accomplished: “to help local communities in developing countries use [intellectual property] to establish sustainable economic development.”²⁰⁵

C. Is Korean Patent Policy Transferable?

The question naturally arises whether the success of Korea’s capacity-building patent policy is transferable to other countries. Noted Korean economist, Keun Lee, has pondered this question and has answered it in the affirmative. He has written that for countries “[i]n the very early stage of industrialization the protection of IP rights is not an important issue.”²⁰⁶ As countries begin to develop and their economies start to take off, however, the situation changes:

There are various views on the efficiency of each country’s IPR system. Developing countries tend to view the enforcement of IPRs as conferring undue monopoly rights on the technology of developed countries. It is often asserted by industrialized countries that a strong IPR protection regime contributes to the indigenous development of technology in developing countries as well, and in the long run both developed and developing countries benefit. The truth is, however, at least in terms of long-term strategy, that a country cannot achieve development without proper protection of IPRs. Instead of dwelling on the level of protection, the debate has moved on to the efficiency of the IPR system at the national level.²⁰⁷

203. *Id.* at 24. PCT-ROAD, discussed above, was one of the many projects made possible by the WIPO Korea Fund-in-Trust. *Id.* at 24–25.

204. ANNUAL REPORT, *supra* note 119, at 25–26.

205. *Id.*

206. Lee, *supra* note 120, at 119.

207. *Id.*

Emerging countries need to ensure that their national patent systems efficiently and effectively contribute to technological development. As countries ponder how best to achieve that goal, it would be fitting for them to look to Korea for inspiration. Although every country possesses unique characteristics that contribute to or detract from the country's success, the authors of this paper believe that the Korean patent system can serve at least as a partial model for emerging nations that desire to use patents to promote and sustain growth.

One hurdle that other countries may need to overcome is the particular nature of Korean culture. Korea is among the most homogeneous countries in the world and its population has been characterized as tenacious, loyal, fiercely competitive, possessing a strong group orientation, and greatly valuing education.²⁰⁸ While those characteristics are an ideal mix for rapid economic development and have clearly aided Korea's ability to utilize the patent system to facilitate development, they should not preclude other countries from adopting some or all of Korea's patent strategies (even if not to the scale applied by Korea), and mirroring Korea's success.

1. Keys to Korea's Success

Three factors have characterized the Korean patent system: the important place patents have in the country's industrial policy; the inherent trust that the country, industry and government alike, place in patent law and policy; and the expansive role that KIPO plays as a capacity-building partner with Korean industry.

Few, if any, countries have amended their patent laws as frequently as Korea,²⁰⁹ and, in keeping pace with international trends, the nature of the amendments have consistently been to expand the scope and strength of patent rights. Korea early on determined that to grow its technological capacity, it needed to benefit from international technology transfer; consequently, it did not resist patenting by foreigners but rather welcomed it. Unlike other developing countries, Korea focused on expanding the scope of its patent system. As the technological capacity of the country

208. See WON-BOK RHIE, KOREA UNMASKED: IN SEARCH OF THE COUNTRY, THE SOCIETY AND THE PEOPLE 43–58, 62, 162 (Jung Un & Louis Choi trans., 2002). Korea, for example, possesses the world's most educated workforce.

209. As mentioned above, the Korean Patent Act has been amended at least 16 times since 1997. See *supra* note 25.

grew, it continued to enhance patent rights along with increasing the level of efficiency of the patent system by, for example, pioneering electronic filing.

But perhaps the most innovative and easily replicable element of Korean patent policy is the function that KIPO and its associated agencies play as capacity builders. Korea is unique in endowing its patent office with responsibilities that go well beyond the administrative act of granting patents and blur the lines between the public and private sectors. In essence, Korea has created in KIPO, KIPA, KIPI, and IIPTI a comprehensive, highly effective public-private partnership that intersects with all aspects of the industrial life cycle from research and development to commercialization of technology and enforcement of patent rights. Korea's patent institutions have been active players in the creation and generation of new technologies, and the Korean economy has been a major beneficiary.

VI. CONCLUSION

Korea's creative use of the patent system to promote technological capacity has arguably been a significant factor in the country's economic growth. Emerging nations may do well to study the Korean system, especially Korea's patent information, assistance, and education initiatives and the institutions Korea has established to administer them. Just as Korea has benefited from putting into place a comprehensive, ambitious system directed toward the development of national industry, so may other countries benefit as well.